Evaluating Environmental Compliance Monitoring with Landsat

Using Landsat to aid federal, state, and local agencies with environmental compliance monitoring efforts.

Environmental management and protection of critical environmental assets relies on a myriad of federal, state, and local regulations. Central to these protection strategies are the enforcement mechanisms employed to insure compliance with the standards they set. Environmental enforcement, however, places a burden on regulatory agencies that must contend with budgetary constraints and resource limitations that frustrate rigorous compliance monitoring.

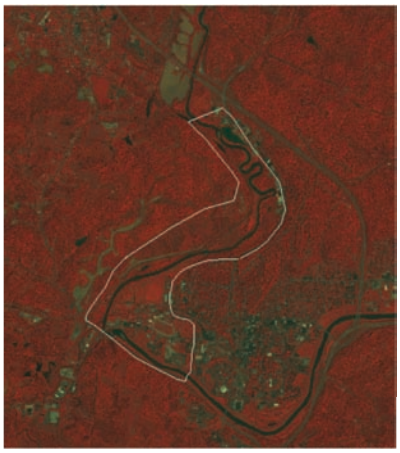
While research has demonstrated the value of satellite-based systems for recovering useful information pertaining to environmental processes, the link to regulatory compliance and the physical inspection regimes these technologies may augment has not been evaluated.

Satellite-based compliance monitoring requires closer integration with the capabilities of modern remote sensing systems.

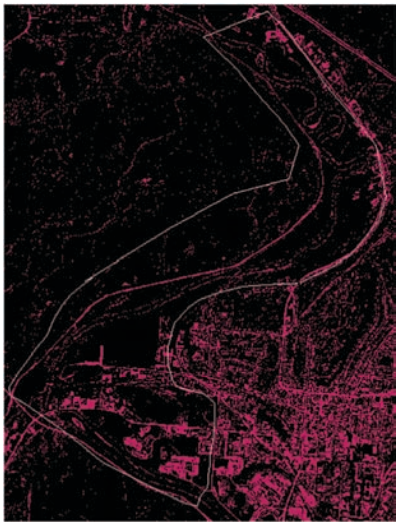
This research undertaken by James Lein at Ohio University uses Landsat images to examine practical issues that surround the application of remote sensing to environmental compliance monitoring and seeks to clarify the role of remote sensing in compliance assessment, and explore "intelligent classifiers" in compliance assessment and monitoring.

Different approaches to assess environmental compliance have been developed but enforcement generally relies on expensive and cumbersome physical inspection by "enforcement staff" as the primary means of detecting violations. Information collected with Landsat and other remotely sensed data will help formulate policy, provide insight into land cover/land use patterns, and clarify long-term trends.

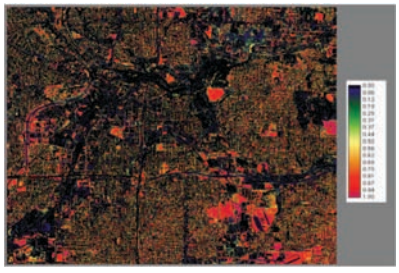
Successful use of remotely sensed data for environmental compliance will enable municipal agencies to save money by using government resources more efficiently.



Municipal Well Field delineated from Landsat TM Data



Impervious Surface within Well Field



Neural Network Produced "Brownfield/ Grayfield" surface

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